TOF Commands Guide Briefly

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Main Directories

➢ Where are the scientific data (SCI)?
/Data/BLOCKS/SCIBPB/RT/
➢ Where's the housekeeping data(HK)?
/Data/BLOCKS/HKLR/CDP *(live)*
/DATA/BLOCKS/HKBPB/RT
➢ SlowControl?
/Data/BLOCKS/HKLR/CDP
➢ OneMinute RootFile?
/Data/ROOT/PG/pcposc0_Data/BLOCKS/SCIBPB/RT

Workspace
Data monitor

//Global Monitor: LT, HT, Crate Event Size

- cd ~/TOF/Monitor2010
- ls -la /Data/BLOCKS/SCIBPB/RT/   //select the latest run block
- ./monitor /Data/BLOCKS/SCIBPB/RT/ 0015796 b 5000 2
- Ctrl+c //to stop the monitor

Monitor .C and .h files are in tofacc/TOF/Monitor2010
Remember that Plane 3 external counters (301 and 310) are removed from CT trigger

Workspace
Data monitor 2

//TOF Dynode pedestal

- cd ~/TOF/Qlistmon
- TOF-CALD-M &

// choose SCI dir

//DTS monitor

- cd ~/TOF/Qlistmon
- TOF-DTS-3-M &

// choose HK dir

// TOF Anode pedestal

- cd ~/TOF/Qlistmon
- TOF-CALA-M &

// choose SCI dir

Workspace Data monitor 2 or ELOG & docs

- make_run_info /Data/BLOCKS/SCIBPB/RT/ 15796

// to obtain run id, tag, time, blocks and triggers

Examples 2011
0012   May 28, 29
0013   May 29, 30, 31
0014   May 31, June 1
0015   June 1, 2
0016   June 2, 3, 4

RUN ID(H)	Date	Time	RUN ID(D)	TAG	BLOCKS	Triggers
4DE02934	27/05/11	22:45:28	1306536244	D501	0011/771-778	602269
4DE02F82	27/05/11	23:10:57	1306537858	D502	0011/779-805	666132

Workspace Qlistmon

//Event Size Monitor

- cd ~/TOF/Qlistmon
- ESMC &

  // choose SCI dir

//JLV1 monitor

- cd ~/TOF/Qlistmon
- JLV1-M 2 5 &

  // choose HK dir

//Additional monitors:

//PDS monitor

- cd ~/TOF/Qlistmon
- PDS-M &

  // choose HK dir

//JLV1 monitor SHT or SubLV1Trig

- cd ~/TOF/Qlistmon/
- cd /Bzmon *or* cd /Lv1mon
- JLV1-M 2 4 &

  // choose HK dir and set BZ or SubLV1 plots

//High Voltage monitor

- cd ~/TOF/Qlistmon
- TOF-HV-M &

Workspace Qlistmon: Housekeeping Monitor

//Monitor2010 HK

- cd ~/TOF/Monitor2010_hk

- ./monitor /Data/BLOCKS/HKLR/CDP 41308 z

  // choose the latest HK block

Workspace
Qlist monitor 2

//SPT Scaler monitor

- SPT2 eas:hosc pcposj0 &

 // ask first to have permission to send commands!

//Otherwise, better (example for Crate S2A)

- ls -ltr /Data/BLOCKS/HKLR/CDP   *//select the run block*
- daq-monitor /Data/BLOCKS/HKLR/CDP/ 28330 10000 0 sdr2scalers |grep SDR2-2-A|less
- .q *//to Esc*

Workspace Test:
To modify a single phototube HV

//In BBtools

- Brick-4 eas:hosc pcposj0 &

//Choose TOF, Crate and HV Channel from TOFconnections.pdf (LR0-LR23), write new Volts values

// Check with the SPT Scaler monitor the result

- ./BBdaq load_DSPprogram_ISS_a.uic

//to reload the flash program in all S crates and fix problems

Workspace
Offline Monitor

//To look at the OneMinute RootFiles (Example):
- cd /Data/ROOT/PG/pcposc0_Data/BLOCKS/SCIBPB/RT
- ls -ltr
- cd /Data/ROOT/PG/pcposc0_Data/BLOCKS/SCIBPB/RT/0023
- root -l
- new TBrowser()   *//to choose the 1 minute .root*

//Single commands
- init_ams_code   *//the alias for* 'source /pocchome/tracker/oliva/EnvVar' *in .bashrc*
- root -l
- .L /pocchome/tracker/pzuccon/AMS/lib/linux/ntuple_slc4_PG.so
- TFile *_file0 = TFile::Open("/Data/ROOT/PG/pcposc0_Data/BLOCKS/SCIBPB/RT/0023/946.root")
- AMSEventR *ams_ev=_file0->Get("AMSROOT")

//Offline Analysis Macro (Example)
- cd masi
- root -l filename.C *(ADC_TDC.C, Beta.C, Particle.C, Position.C, Time.C, …)*

TOF/**BBtools** Folder and **BBdaq** Functions

- cd ~/TOF/BBtools

//all .uic configuration and scan files are in macro folder and its subfolders. Edit with Emacs (Ctrl+x, 1 to remove the lower window)

// Configuration .txt files are inside the dir: pocchome/tofacc/TOF/BBtools/macro/cmd/FM/Effscan/Configuration_files/ // to reset modifications or to load a TOF configuration file with higher or lower HV or HT (side A examples):

- ./BBdaq Effscan/load_SDR_EFF_SideN_a.uic

//to check nodes and thresholds:

- ./BBdaq Eff_scan_check_A.uic

//to load and write real TOF configuration in space:

- ./BBdaq load_SDR_ISS_a.uic

//to load only TOF configuration:

- ./BBdaq only_load_SDR_ISS_a.uic

To load a single configuration file

cd ~/TOF/Bbtools

./BBdaq

- daq
- sdr2 2 a   //sdr2 #crate side
- flashdir
- flashwr pocchome/tofacc/TOF/FM/Configuration_files/ISS/Conf_S2A_flight_nominal.txt
  //only if you want to rewrite the file
- flashld 69f1   *//configuration file address for nominal values*
- sdprord 3 *//to read the Scrate Configuration*
- ? *//for further info*
- ret
- exit

To modify a parameter which is not in standard configuration files

High Voltages

101n1:	1811
101n2 + 108n2:	1835
101n3 + 108n1:	1838
102n1 + 107n2:	1908
102n2 + 107n1:	1989
103n1 + 106n2:	1733
103n2 + 106n1:	1721
104n1 + 105n2:	1996
104n2 + 105n1:	2076
108n3:	1813
201p1 + 208p2:	2249
201p2 + 208p1:	2240
202p1 + 207p2:	2030
202p2 + 207p1:	2035
203p1 + 206p2:	2001
203p2 + 206p1:	2103
204p1:	1652
204p2:	1555
205p1:	1543
205p2:	1523
ACC01:	1974
ACC02:	1923
ACC03:	1972
ACC04:	1935
DC/DC setting:	2349

Thresholds

	LT	HT	SHT
101n+103n+105n:	8	8	116
107n:	8	17	177
102n+104n+106n:	8	14	150
108n:	8	12	130
201p+203p+205p:	8	12	136
207p:	10	31	255
202p+204p+206p:	11	14	167
208p:	8	8	110
ACC01+ACC02+ACC03:	200	200	200
ACC04:	200	200	200

Data Processing Control

Dynamic Pedestal Control:	1
Nsigma for SFET threshold:	5
Nsigma for SFEA threshold:	3
Nsigma for SFEC threshold:	4
Low limit on SFET threshold:	48
High limit on SFET threshold:	120
Low limit on SFEA threshold:	96
High limit on SFEA threshold:	224
Low limit on SFEC threshold:	80
High limit on SFEC threshold:	160

Other parameters

DC/DC power:	0
SFEC Clock Enable:	1
LVDS driver enable:	1
Prescaler gate:	2
Mask for CP1:	3072
Mask for CP0:	3072
Mask for CT1:	3072
Mask for CT0:	3072
Mask for BZ1:	3072
Mask for BZ0:	3072
Pulser Control:	0
Pulser Period:	0
Programmable BUSY:	140

For example Max Event Size (look at SDRnotes.pdf)

You have to modify the second and the third line (see Configuration Files.pdf) to count the new number of lines and parameters.

Then cancel the last word, the control one, and execute in **/FM/Configuration_files/ ./calc_CRC fileconfig.txt** to obtain the new crc word and copy it.

Make sure there's a void line at the end of the file (in emacs)

FlySpare (for testing)

Go in BBtools and open command_path.conf. *Uncomment*

- eas:hrdl amslaptop2   *and comment*
- eas:hosc pcposj0   *and put it at the beginning of the file*

// Test example

- ./BBdaq
- daq
- sdr 2 b
- flashdir   *//to check*
- flasher 69f1   *//to erase (old nominal:* 79b1*)*

In .uic file flasher 200 *for the program* flasher 400 *for configuration,* flasher 800 *for test*

- flashwr configurationfile.txt *//write   config file must be in /BBtools*
- flashld 69f1   *//to load*
- flashrd 69f1   *//to read*
- flashld 69f1 *//to load the program itself*

Update

- @ June 2011: both nominal and default files use 69F1 address

- With ./BBdaq load_SDR_ISS_a.uic

  you can write and load nominal configuration files and reload the flash program at the same time (with ./BBdaq load_SDR_ISS_S2_a.uic you can do the procedure for crate S2 only)

A Troubleshooting Procedure

The problem (due to 304p2+307p1):

❑ Data monitor event size S-Crate 2 exceeds 200 words and/or

❑ Scaler monitor shows anomalous counts for SDR2-3-A and/or

❑ JLV1 monitor cp s3p exceeds 30000 counts

Troubleshooting:

❑ *Ask DAQ to stop the run*

❑ *First try to reload nominal configuration files:*

• cd ~/TOF/BBtools

• ./BBdaq only_load_SDR_ISS_a.uic

❑ *If it doesn't work, reload the flash program with*

• ./BBdaq load_DSPprogram_ISS_a.uic

You can also check and adjust the HV value of channel LR 7 (304p-307p) from HV Brick Controller, in the 1600-2150 Volt range, after the reloading:

❑ *in BBtools folder*

• Brick-4 eas:hosc pcposj0 &

ACC Monitor

- cd ~/acc/stable/GSC/
- ./ACChousekeepingM
- ./ACCdataM

Utilities

//Test with step-modified HV can be done from TOF/Bbtools/macro/cmd/FM/Effscan with (example)
- g++ HVsteps_new_N.C -o HVsteps_new
- ./HVsteps_new_N S0A_run2.txt

// In TOF/Monitor_test/conf/   HV configuration check can be done with
- ./Eff_checkN 1306916231.checkhv 2 // file.checkhv #runtest

//To replace a string with another in each file in a single directory
- sed -i 's/oldstring/newstring/g' *.txt

//To compare the content of two files
- sdiff nome1 nome2

Remote access to TOF pcpoc27

a) *Access ams cern cluster with your username and password*

- ssh -Y user@ams.cern.ch

b) *Access to pcposc1 with user "ams" and pass "AMS02STS134"*

- ssh -Y ams@pcposc1

c) *from here, access to pcpocc27*

- ssh -Y tofacc@pcpoc27